

Appl. No. 10/065,596
Amdt. Dated 5 August 2005
Reply to Office action of 23 May 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A motor/generator power conditioner, comprising:
a rectifier electrically coupled directly to a motor/generator port; and
an a multi-leg inverter electrically coupled to the rectifier and to a load port,
wherein in a startup mode, the rectifier reverses role and functions as an inverter to provide startup power to the motor/generator port, and
wherein in an operational mode, the combined rectifier and inverter provide generated power to the load port and generates a neutral output, wherein one of the legs of the inverter is electrically coupled directly to the neutral output.
2. (Previously presented) The motor/generator power conditioner of claim 1, further comprising:
a DC power bus capable of bi-directional power flow interposed between and directly coupled to each of the rectifier to the inverter; and
a bus capacitor positioned in parallel to the DC power bus.
3. (Previously presented) The motor/generator power conditioner of claim 2, further comprising a startup power source is coupled to the DC power bus.
4. (Original) The motor/generator power conditioner of claim 3, wherein in the operational mode the startup power source is recharged by at least one of the rectifier and the inverter.
5. (Original) The motor/generator power conditioner of claim 1, wherein the rectifier comprises an active rectifier.
6. (Original) The motor/generator power conditioner of claim 5, wherein the rectifier comprises a three-leg rectifier comprised of:
a plurality of switching devices; and
a plurality of diodes, each of said diodes being electrically coupled in parallel to a respective corresponding switching device.

Appl. No. 10/065,596

Amdt. Dated 5 August 2005

Reply to Office action of 23 May 2005

7. (Currently amended) The motor/generator power conditioner of claim 1, wherein the inverter comprises a four-leg inverter ~~comprised of, each of said legs comprising:~~
a plurality of switching devices; and
a plurality of diodes, each of said diodes being electrically coupled in parallel to a respective corresponding switching device;
~~wherein one of the four legs is electrically coupled to the neutral output.~~
8. (Previously presented) The motor/generator power conditioner of claim 1, wherein the combined rectifier and inverter provides generated power and startup power without a separate starter circuit.
9. (Original) The motor/generator power conditioner of claim 1, further comprising a separate starter circuit for producing the startup power.
10. (Original) The motor/generator power conditioner of claim 1, wherein a power factor of the generated power is adjustable.
11. (Original) The motor/generator power conditioner of claim 1, wherein a power factor of the generated power is greater than about 0.95 leading or lagging.
12. (Original) The motor/generator power conditioner of claim 1, wherein a power factor of the generated power is about zero.
13. (Original) The motor/generator power conditioner of claim 1, further comprising a prime mover for the motor/generator.
14. (Original) The motor/generator power conditioner of claim 13, wherein the prime mover for the motor/generator comprises one of a turbine and a diesel motor.
15. (Previously presented) The motor/generator power conditioner of claim 1, wherein the motor/generator power conditioner is a two way conditioner wherein the roles of the rectifier and the inverter are selectively reversible so that the rectifier acts as an inverter and the inverter acts as a rectifier.
- 16-20. (Canceled)
21. (Currently amended) A motor/generator power conditioner, comprising:
a three-leg active rectifier electrically coupled directly to a motor/generator port;
a four-leg inverter electrically coupled to a load port;

Appl. No. 10/065,596

Amdt. Dated 5 August 2005

Reply to Office action of 23 May 2005

a bi-directional DC power bus electrically coupling the rectifier to the inverter; and
a neutral output directly coupled to one of the legs of the inverter and such as to configure the motor/generator power conditioner so that the three-leg active rectifier can function as an inverter during a startup mode wherein the generator is operated as a motor to accelerate the motor of the motor/generator up to an operational speed.

22. (Previously presented) The motor/generator power conditioner of claim 21,
wherein in an operational mode wherein power is being generated by the motor/generator, the combined rectifier and inverter provide generated power to the load port and a neutral for the neutral output.

23. (Previously presented) The motor/generator power conditioner of claim 22, wherein a power factor of the generated power is adjustable.

24. (Previously presented) The motor/generator power conditioner of claim 22, wherein a power factor of the generated power is greater than about 0.95 leading or lagging.

25. (Canceled).

26. (Currently amended) A motor/generator power conditioner of claim 1, wherein the inverter comprises four legs, wherein a first leg is connected to ground a first output of the load port, a second leg is connected to a ~~first~~ second output of the load port, a third leg is connected to a third output ~~the neutral output~~ of the load port and a fourth leg is connected to a ~~second~~ fourth outlet of the load port.

27. (Canceled).